

AMENDMENTS TO THE CLAIMS

Please enter the following amendments:

1. (Currently Amended) A fuel cell system comprising: a fuel cell; fuel gas supply means for supplying a fuel gas to an anode of said fuel cell; oxidant gas supply means for supplying an oxidant gas to a cathode of said fuel cell; inert gas supply means for supplying an inert gas to the anode and/or cathode of said fuel cell; and means for measuring a pressure P_a in an inlet-side flow path leading to the anode of said fuel cell and a pressure P_c in an inlet-side flow path leading to the cathode,

said fuel cell being subjected to a purge operation of replacing the fuel gas and/or oxidant gas in said fuel cell with the inert gas supplied from said inert gas supply means when said fuel cell is started up or shut down,

wherein said fuel cell system further comprises means for variably controlling the flow rate of the inert gas supplied to said fuel cell based on the values of P_a and P_c during the purge operation of said fuel cell, ~~[[and]]~~ such that the relation $0 < \Delta P_o \times \Delta P_p$ and $|\Delta P_p| \leq |\Delta P_o|$ is always satisfied, where a wherein the differential pressure ΔP is defined as $\Delta P = P_a - P_c$, ~~[[and]]~~ ΔP_o is the differential pressure during operation, $[[\Delta P_o]]$ and ΔP_p is the differential pressure during the purge operation ~~ΔP_p always satisfy the relations: $0 < \Delta P_o \times \Delta P_p$ and $|\Delta P_p| \leq |\Delta P_o|$.~~

2 – 3. (Canceled)

4. (Previously Presented) The fuel cell system in accordance with claim 1, further comprising means for changing the internal diameter of an outlet-side flow path of an exhaust gas from said fuel cell at least in stages, and means for changing said internal diameter at least in stages based on the values of P_a and P_c during the purge operation of said fuel cell.

5. (New) The fuel cell system in accordance with claim 1, further comprising a controller configured to

perform the purge operation for shutting down said fuel cell by: comparing the pressure P_a in the inlet-side flow path leading to the anode and the pressure P_c in the inlet-side flow path leading to the cathode; increasing in stages the flow rate of the inert gas supplied to one of the inlet-side flow paths, the one having a larger pressure; and then increasing in stages the flow rate of the inert gas supplied to the other one of the inlet-side flow paths, the one having a smaller pressure; and

terminate the purge operation by: closing the communication between the inlet-side flow path having a smaller pressure and a flow path for supplying the inert gas; and then closing the communication between the inlet-side flow path having a larger pressure and the flow path for supplying the inert gas.

6. (New) The fuel cell system in accordance with claim 1, further comprising a controller configured to

perform the purge operation for starting up said fuel cell by: comparing the pressure P_a in the inlet-side flow path leading to the anode and the pressure P_c in the inlet-side flow path leading to the cathode; increasing in stages the flow rate of the inert gas supplied to one of the inlet-side flow paths, the one having a larger pressure; and then increasing in stages the flow rate of the inert gas supplied to the other one of the inlet-side flow paths, the one having a smaller pressure; and

terminate the purge operation by: closing the communication between the inlet-side flow path having a smaller pressure and a flow path for supplying the inert gas; and then closing the communication between the inlet-side flow path having a larger pressure and the flow path for supplying the inert gas.